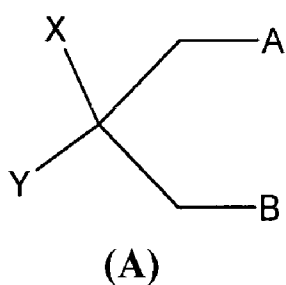


NOVEL POLYAZIDO COMPOUNDS

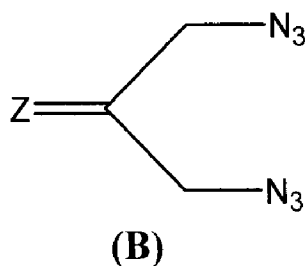
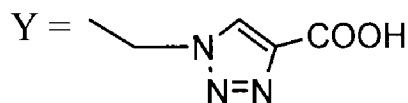
Abstract

This invention relates to a series of novel compounds having the general structures A and B:

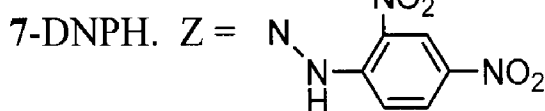


1. $X = N_3$; $Y = CH_2N_3$; $A = B = N_3$
2. $X = OH$; $Y = CH_2N_3$; $A = B = N_3$
3. $X = ONO_2$; $Y = CH_2N_3$; $A = B = N_3$
4. $X = NO_2$; $Y = CH_2N_3$; $A = B = N_3$
5. $X = Y = NO_2$; $A = B = N_3$
12. $X = Y = NO_2$; $A = B =$

13. $X = OH$; $A = B =$



6. $Z = CH_2$
7. $Z = O$
8. $Z = NOH$



including 2-azido-2-azidomethyl-1,3-diazidopropane (1),
 2-azidomethyl-2-hydroxy-1,3-diazidopropane (2),
 2-azidomethyl-2-nitrato-1,3-diazidopropane (3),
 2-azidomethyl-2-nitro-1,3-diazidopropane (4),
 2,2-dinitro-1,3-diazidopropane (5), methallyldiazide (6), a dimer

of methallyldiazide (6), comprising 3a,8a-Bis-azidomethyl-3a,4,8a,9-tetrahydro-3H,8H-bis[1,2,3]triazolo[1,5-a;1'',5''-d]pyrazine (6-Dimer), 1,3-diazidoacetone (7), and 2-Oximido-1,3-diazidopropane (8). Also shown are reaction intermediates of these compounds, including 2,2-bis(chloromethyl)oxirane (9), and 2,2-bis(azidomethyl)oxirane (10). In addition, a number of potentially useful energetic compounds have been prepared from the low molecular weight polyazido compounds above, including N-2(azido-1-azidomethyl-ethylidene)-N''-(2,4-dinitrophenyl)-hydrazine (7-DNPH), 1,3-Bis(4-carboxytriazolyl)2,2-dinitropropane (12), Tris(4-carboxytriazolomethyl)methanol (13), Benzene-1,3,5-tricarboxylic acid tris(2-azido-1,1-bisazidomethyl-ethyl)ester (14), Adamantane 1,3,5,7-tetracarboxylic acid tetrakis(2-azido-1,1-bisazidomethyl-ethyl)ester (15), Adamantane carboxylic acid 2-azido-1,1-bisazidomethyl-ethyl)ester (16), cubane 1,3,5,7-tetracarboxylic acid tetrakis(2-azido-1,1-bisazidomethyl-ethyl)ester (17), cubane 1,4-dicarboxylic acid bis(2-azido-1,1-bisazidomethyl-ethyl)ester (18).